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BIRTH ORDER, PARENT-ADOLESCENT RELATIONS AND THE DECISION TO ENGAGE IN ADOLESCENT SEXUALLY RISKY BEHAVIOUR

BY

STACY KRIS-ANN GRAINGER

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements for the degree of **Master of Science.**

DEPARTMENT OF HUMAN ECOLOGY

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled **BIRTH ORDER, PARENT ADOLESCENT RELATIONS AND THE DECISION TO ENGAGE IN ADOLESCENT SEXUALLY RISKY BEHAVIOUR** submitted by **Stacy Kris-Ann Grainger** in partial fulfillment of the requirements for the degree of **Master of Science.**

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Dedication

This thesis is dedicated to my revered family and esteemed friends. Without their support, constant encouragement, everlasting interest and endless proof reading of my work, this thesis would not be what it has become and this part of my journey would not be complete.

Abstract

In this study, the relationship between birth order, relations with parents and the decision to engage in adolescent sexually risky behaviour was examined using a secondary data set. The survey was administered in 1996 to 1,911 students, age 13-17, in grades 7 through 12. The students were selected from a convenience sample, in which the funding agency gained access to local schools in Alberta. In the study, family structure, gender and sexually risky behavior variables were analyzed and a parenting scale was developed to rate the adolescent respondents' affiliation with their parents in order to determine the effect of parent-adolescent relation on sexually risky behavior and birth order. A one way analysis of variance was used to analyze the relationship between sexually risky behavior, birth order, gender and relation with parents to determine if it was significant at the .05 level of significance. Several significant relationships were found.

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I. Introduction

In recent years, researchers have identified the need for data on adolescent sexual behaviour. This information is needed to predict and prevent the growing rate of STDs among adolescents, particularly, among sexually active adolescents with low levels of contraceptive, especially condom, use (Leigh, Morrison, Trocki & Temple, 1994; McDonald, 1996). According to an Alberta Statistical Report (1991), females aged 15-19 continued to have the highest rate of Neisseria gonorrhoeae and Chlamydia trachomatis when compared to other age and gender groups. Males aged 15-19 experienced a 25% increase in Neisseria gonorrhoeae and a 13% increase in Chlamydia trachomatis, which suggests an increased rate of unprotected sexual activity in this age category. The prevalence of STDs among this age group has a large impact on the health care system. Hence, accurate and up to date information on the sexual behaviours of adolescents is poignantly important. There must be primary prevention in an early stage to reduce future STD transmission in adolescence (Leigh, Morrison, Trocki & Temple, 1994; Seidman, Mosher & Aral, 1994).

Adolescence is the progressive stage in human development that requires a teenager to move from childhood to adulthood. As Strom, Oguinick and Singer (1995) noted, adolescence encompasses many demands, challenges, stressors and difficulties that are unique to adolescents and becoming increasingly stressful in the 1990's. Strom et al. (1995) state that violence, drug and alcohol use, sexual involvement and AIDS are becoming dangerous problems for teenagers, families, teachers and health care providers. Adolescents possess unique behaviours and mentalities that require special attention, support and concern. Researchers have studied the phenomenon of adolescent sexual activity with the focus on the relation of sexually risky behaviour with other risky behaviours such as drug, alcohol and nicotine use (DeWit, Silberman, Goodstadt & Stoduto, 1995; Choquet & Manfredi, 1992).

There are many different reasons for adolescents to choose risky behaviour. Socioeconomic and demographic variables, unemployment, parental education, impact of living with a single parent or a two parent family, the mother's work schedule (full-time vs. part-time), lack of enjoyable extracurricular activities, poor academic standing and peer influence have been found to contribute to risk taking behaviour in adolescents (Hyphantis, Koutras, Liakos & Marselos, 1991; DeWit, Silberman, Goodstadt & Stoduto, 1995; Jenkins, 1996; Seidman, Mosher & Aral, 1994). An important finding, as noted above, is the impact of the parent - adolescent relationship. This incorporates parenting style, technique and parental tendencies. According to researchers (listed below), adolescents with alcoholic/drug addicted parents and certain parenting styles, such as maternal rejection, degree of parental concern, inconsistency in discipline, restrictive limit setting and permissiveness and parental conflict regarding childrearing are susceptible to risky behaviours. Researchers have also found that lack of communication, family disruption and authoritarian or laissez-faire parenting style, parental socialization and response are also factors that influence risk taking behaviour (Hyphantis, Koutras, Liakos & Marselos, 1991; Vicary & Lerner, 1986; Jurich, Polson, Jurich & Bates, 1985 {Jenkins, 1996}). Researchers also indicate that risky behaviour in adolescents may be influenced by modeling from older sibling's risky behaviour (Brook, Whiteman & Gordon, 1991; East & Felice, 1992). It is interesting to note, that not all adolescents are involved in risky behaviour despite their situation in relation to various risk prone factors. However, many of the decisions that adolescents make and the life styles they adopt affect them as adults. This is reflected by the increase in respiratory disease, cancer rates, STDs and AIDS, and accidents such as drunk driving or drug over doses among adults (Joffe, 1995; Choquet & Manfredi, 1992; Soren, 1995).

"Before risky behaviour can be changed it is necessary to define the dangers and explore the reasons for taking risks." (Persson, 1993). An important determinant, as noted above, is the

finding that the decisions adolescents make regarding risky behaviour is influenced by their parents. One interesting aspect of the family is the birth order and the impact it has on child rearing. Occupational and academic achievement in children, sexual activity, drug and alcohol use, social skills and interpersonal relationships have been associated with birth order (Kinard & Reinherz, 1987; Ickes & Turner, 1983; Kilpatrick & Cauthen, 1969; Douvan & Adelson, 1966; East & Felice, 1992; Brook, Whiteman, Brook & Gordon, 1991). However, there are few studies focused on adolescent risky behaviour in relation to birth order. Adler remarked that "...the most trustworthy approaches to understanding the personality of a patient are to look at his birth order" (Fakouri & Hafner, 1984, p.209); Adler also suggested that in order to comprehend and to predict one's actions, birth order plays a dominant role in the explanation.

If parents and educators understood why adolescents behaved the way they do with respect to sexual, drug and alcohol precocious risky behaviour, they could better develop the infrastructure to instruct future adolescents regarding choices of risky behaviour. This could lead to appropriate health education of adolescent groups at various levels of risk. Special health education could be targeted at those in high risk situations concerning the choices they make (Joffe, 1995; Soren, 1995). If birth order is found to be a key predictor of adolescent risky behaviour, potential health hazards and preventions could be identified.

The purpose of this study is to determine if birth order, and relation with parents, is related to adolescent decision making regarding sexually risky behaviour. To define the variables requires a search for the most accurate terminology. The variable birth order, as used by Billingham, Smith and Keller (1989) encompasses both the chronological (ordinal, physical position, such as first, middle, last born) and the theoretical (psychological position entailed by one's style of life and the interpretation that one makes of the situation to which one is born) level. Within the present study, only chronological order is measured and used as that is the only data available based on the secondary data employed. Relation with parents refers to the varying

styles of parenting and will be discussed in further detail later. Adolescence is broadly defined as ages 12-21, however, within this study only those 13-17 (grades 7 through 12) are studied. Finally, the most demanding variable to define is what risky behaviour entails. Risky behaviour incorporates a variety of terms that deserve special consideration in exploring the dimensions in which it must encircle. This makes the term, risky behaviour, enticing because it embraces any behaviour that is aimed at risking the health of the adolescent. For example, drug and alcohol abuse can have deadly consequences such as over doses and drunk driving. Sexual intercourse often has detrimental and future deadly consequences involving STDs and an increased probability of acquiring HIV and AIDS. AIDS is a family disease, therefore, sexuality education and awareness should be communicated in the home. For the purpose of this study, risky behaviour is narrowed and subsequently measured by sexual activity, however, studies of drug and alcohol use will be discussed in the literature review. Adolescent sexually risky (or risk taking) behaviour is defined as adolescent sexual intercourse with multiple partners and/or sexual intercourse with no protection and/or age of first intercourse (including vaginal and anal intercourse). Birth order is examined at the chronological level rather than the theoretical level and subsequent birth order relations such as sibling and peer involvement are not discussed in depth (due to the accessible data available as mentioned earlier). Thus, the objectives of this study are:

(1) to determine if birth order is related to adolescent sexually risky behaviour for males and females in grades 7 to 12

(2) to determine if parenting style is related to adolescent sexually risky behaviour for males and females in grades 7 to 12

(3) to determine if birth order is related to parenting style of males and females in grades 7 to 12

(4) to determine if there is any interaction between any of these main effects.

II. Literature Review

Adolescents are an age group that deserve special attention and focus. The new trend towards Adolescent Medicine reflects this, as there are increasing numbers of STDs and AIDS among this age group (Soren, 1995; AIDS in Canada, 1996; Alberta Statistical Report, 1991). Adolescence is a transitional stage responsible for the lifestyles of the adults people become, as the behaviour learned as teenagers ensues into adulthood (Joffe, 1995; Soren, 1995). As mentioned earlier, risky behaviour in adolescents is defined as behaviour that puts the adolescent at risk of detrimental consequences. The focus of this literature review is to examine research that has been done on birth order, parenting and adolescent sexually risky behaviour (with mention of drug/alcohol use). The present researcher begins this literature review by examining some of the work done on birth order, then continues with an examination of some literature on parenting techniques and birth order, supervened by parenting styles and risky behaviour. The following section then proceeds to disclose information from the literature reviewed on sexual activity and risky behaviour and is then concluded with a small review of adolescent health and practitioners. Each section will note the strengths and limitations of the literature reviewed.

Birth Order

In general, there is not extensive literature on birth order and its correlation with adolescent sexual risky behaviour. In fact, birth order research has appeared to have lost its appeal since the 1970's. This may partly be due to the fact that "..much of the past research has been marred by weak hypotheses and poor methods" (Cowley, 1996, p. 65). Cowley (1997) claims that birth order research has a reputation for "flakiness", and suggests that this may be due to prior researchers not controlling for variables such as social class and family size, hence, many studies were not taken seriously. Birth order does have an impact on behaviour and

actions of humans, and if variables are properly controlled, there has and will continue to be important evidence of birth order effects. Researchers in the area of birth order went so far as to say that birth order was the basis for knowing and understanding one's personality and actions (Toman, 1970). Some researchers also said that any study on birth order must use the concepts of Adler as a theoretical basis (Fakouri & Hafner, 1984). Birth order became an interest to many people after Adler recognized its importance (Hapworth & Heilman, 1993). One of Adler's assessment methods to lifestyle and personality was through the significance of family constellation or birth order (Ansbacher, 1977). Adler's work on birth order stimulated 400 publications from various authors between 1963 and 1971 (Vackell, Felkcer & Miley, 1973). Some of these studies are discussed below.

There is an inconsistency in findings in regards to which birth order comprises the most precocious sexual behaviour. There are also a variety of control variables in each study. Various researchers have found that first born children are at an elevated risk of seeking sexual risky behaviours and harmful actions such as delinquency (Calhoun, Connley & Bolton, 1984; Schacter, 1959; Dovan & Adelson, 1966; Ansbacher, 1977; Touhey, 1971). These inconsistencies in birth order findings are demonstrated by some researchers finding that first born attributes include increased interest in social activity and belonging but less social skills, neuroticism and problem child syndrome and an increased interest in fulfilling adult roles prematurely and seeking parental attention. Other researchers have found different first born children attributes, such as high doses of caution, conservative, dogmatic, responsible, less friendly, less exciting and adventurous, fewer pursuits of communication and conversation (Fakouri & Hafner, 1984; Nesbitt, 1968; Dovan & Adelson, 1966; Kilpatrick & Cauthen, 1969; Ickes & Turner, 1983; Calhoun, Connley & Bolton, 1984). In review of the first born studies, researchers have found that first borns have distinguishable attributes and traits which may predispose them to risky behaviour and tendencies.

Conversely, there is a group of researchers who have found middle children to be most active in risky behaviour. They found middle children were more rebellious and neglectful to authority (Ansbacher, 1977; Calhoun, Connley & Bolton, 1984). Other researchers have found that it is not only the middle born, but also the last born who were at an elevated risk of pursuing adolescent risky behaviour such as precocious sexual encounters, drug and alcohol use and deviant actions (East & Felice, 1992; Brook, Whiteman, Brook & Gordon, 1991; Calhoun, Connley & Bolton, 1984). These researchers found that birth order played an important role in predicting adolescent sexual intercourse (pregnancies), drug and alcohol use, positive communication, conversation, interactions and social skills with opposite sex strangers and friends, increased rewarding interactions, more diverse and adaptable, more influenced by deviant older siblings and had a higher rate of delinquency (East & Felice, 1992; Brook, Whiteman, Brook & Gordon, 1991; Ickes & Turner, 1983; Calhoun, Connley & Bolton, 1984). These researchers found middle and last borns to have different personality traits and attributes than the earlier researchers found in the first born, although similar behaviours were also found.

Billingham, et al. (1989) made note that despite the extensive literature on birth order, there is little literature on sexual behaviour and birth order, and the literature available is contradictory, as noted above. Billingham, et al. (1989) found in their study of the effects of chronological and theoretical birth order on sexual attitudes and behaviours of college students, that there were no significant differences found but rather a suggestion that "...sexual behaviour and attitudes may be influenced to a greater degree by biological and cohort factors than by sibling position." (p. 109). This correlation was not discussed extensively in any of the other birth order studies reviewed. Rather, birth order has been correlated with a variety of other variables, such as ethnicity, gender, sibling spacing and size and parental rearing (Rule, 1991; Calhoun, Connley & Bolton, 1984; Fallon & Bowles, 1996; Sputa & Paulson, 1995; Rule, 1991; Billingham, Smith & Keller, 1989). These variables need to be controlled and deserve more

attention in order to erase the prior presumption that birth order studies are "flaky". However, because of the studies reviewed, which used these variables are relatively recent, this may be a reflection of a trend towards better methods and hypotheses.

In summary, the vast amount of literature on birth order has decreased since the 1970's. Specifically, risky behaviour research has lacked a focus on chronological and theoretical birth order. The reason appears to be unclear, as evidently there is some interest and evidence that birth order is important. "Several authors however, have theorized that birth order should impact sexual behaviour and attitudes." (Billingham, Smith & Keller, 1989, p.110), despite this, relatively few studies have been done on birth order and adolescent sexual behaviour and attitudes. Although the number of research articles on birth order and adolescent sexually risky behaviour is small and rather neglected, it is evident that birth order is related to risky behaviour and needs further examination. As Billingham, et al. (1989) stated, there are both many similarities and dissimilarities between first born and later born which are worthy of research. Recent research examining important intervening variables are also missing from the literature. There are also gaps in the research; findings across the decades or in those relative to the same time period are not consistent. An important variable to look at is the significant role of parenting, as it has been identified with birth order but not extensively researched. Child rearing, parent - adolescent relationship and birth order play an important part in determining the choices that adolescents make. Parenting may be an important intervening variable in the relationship between birth order and risky behaviour. Hence, future research should examine the relationship between parenting, birth order and risky behaviour.

Parenting Techniques and Birth Order

Various researchers have found certain parenting techniques to be related to birth order. Researchers also indicate that treatment, because of one's birth order, is affected by the

proportion of adult socialization, which consequently, instruments the differences between first and later born behaviour and personality characteristics (Claxton, McIntyre & Wheatley, 1995). Many researchers found first born children to view both parents as considerably more strict, controlling, coercive and have more expected of them then later born (Rule, 1991; Schaller, 1978; Ernst & Angst, 1983). Similarly, researchers also found that first born children were more aggressive toward their younger siblings. Furthermore, researchers found that first born children's occupational aspirations were mediated by their perceptions of parental involvement in their learning process, and that their achievement was influenced by family size and parental behaviours (Ernst & Angst, 1983; Majorbanks, 1995; Sputa & Paulson, 1995). Other researchers found that it is not only first born children, but also second born children who thought mothers were more demanding. However, second born children also thought mothers were more responsive (Sputa & Paulson, 1995). Another interesting finding in the literature was that later born children, specifically third born adolescents, had lower GPAs than first and earlier middle born children (Sputa & Paulson, 1995). Other researchers found that control variables such as gender, age spacing and socioeconomic status must be monitored to find the true effects of birth order (Nystul, 1995; Sputa & Paulson, 1995). However, as with all other birth order findings, there appears to be inconsistent and contradictory findings and questions of the appropriateness of the variables used.

In general, researchers found first born children to view their parents as more controlling and strict, however, the parents did not reciprocate this, rather, they felt they maintained consistent parental involvement (Sputa & Paulson, 1995). Later born children felt their mothers were more responsive and birth order played a role in other variables such as GPA and achievement. There appears to be little research on birth order and parenting, and the findings are inconclusive. However, there is much more research done on parenting styles and adolescent

risky behaviour which portrays clear findings and predictions for participation in these risky behaviours.

Parenting Styles and Risky Behaviour

"Many adolescents face their greatest adversity in the arena which one might think would be their greatest source of support: the home." (Strom, Oguincik & Singer, 1995, p. 348). Strom et al. (1995) report that conflicts with parental directives and discipline, divorce and violence make teens confront multiple stressors within the family and many adolescents feel neglected and angered by the limitations and expectations they receive from their parents. Many researchers found several different types of parenting styles to be related to different adolescent risky behaviours, personalities, academic achievement, adjustment and substance use (Weiss & Schwarz, 1996 - Baumrind, 1968, 1971, 1989, 1991). Seven parenting styles were frequently referenced: authoritative, democratic, nondirective, authoritarian-directive, nonauthoritarian-directive, unengaged and good enough (Weiss & Schwarz, 1996 - Baumrind, 1968, 1971, 1989, 1991). Results from the various researchers utilizing these styles indicated that authoritative parents (firm, consistent discipline, warm and supportive) had better adjusted adolescents than unengaged (neglecting and rejecting) parents or authoritarian (coercive) homes which had higher consumption of alcohol, increased maladjustment and greater psychological distress and negative socialization outcomes (Gecas & Seff, 1990; Wess & Schwarz, 1996). Researchers also distinguished different types of family communication on sexually relevant topics: sexually healthy vs. sexually neglectful families (Maddock, 1989). The sexually healthy families facilitated decision making and problem solving while maintaining equality and balance in the family while communicating responsively and acknowledging boundaries (Maddock, 1989). The sexually neglectful family (unhealthy family) minimized and/or ignored the topic of sexuality and communication (Maddock, 1989). Other variables such as marital disruption,

remarriage, divorce, lack of parental monitoring and support and lack of communication were also related to adolescent risky behaviour (Coleman & Ganong, 1990; Luster & Small, 1994).

In regards to specific risky behaviours among adolescents, several trends were identified with sexual risky behaviour. The earlier the mother's first sexual experience and age at first birth, mother's full time work history (if did not work full-time and black adolescent than associated positively with having multiple partners; if did work full time and white adolescent than associated positively with having multiple partners) the earlier the daughter's sexual experience and predictability of multiple partners. Also, the lack of parental support and monitoring, and lack of encouragement and communication, low education levels of parents, teens perceptions of dislike by family members and a history of familial sexual abuse lead to increased levels of sexual behaviours in adolescents (Newcomer & Udry, 1984; Seidman, Mosher, Sevgi & Aral, 1994; Luster & Small, 1994; Odgers, Houghton & Douglas, 1996; Braverman & Strasburger, 1993). Similarly, parental behaviour was related to adolescent risky behaviour involving drug and alcohol use. Parental conflict in childrearing practices, restrictive discipline, parental alcoholism, inconsistent discipline, maternal rejection, family dysfunction, frequent use of alcohol or drugs by older siblings, all impacted adolescent drug and alcohol use (Vicary & Lerner, 1986; Hyphantis, Koutras, Liakos & Marselos, 1991; DeWit, Silverman, Goodstadt & Stoduto, 1995; Brook, Whiteman, Brook & Gordon, 1991). It is important that researchers look not only at the occurrences of adolescent risky behaviour, but also at what adolescents feel they need in terms of parental rearing and support.

Kay (1995) notes in a letter to the editor, that some adolescent behaviours such as marijuana smoking may be a way of "...embracing the world beyond the family instead of ice-cold terror" (p.1423) of family problems. Strom, Oguincik and Singer (1995) continue that many of the comments from the open-ended questions reported that adolescents "...do look to adults for help and guidance but they despair that adults can understand their turmoil, or that they

possess the ability to do anything to help" (p.354). One subject said that one reason that a lot of teens turn to drugs and gangs is because they don't have an adult in their life who understands or respects what they are going through (Strom, Oguincik & Singer, 1995, p. 355). Others also said that they have to deal with parents that don't love them or don't care or don't want them around. Regardless of the individual circumstance, researchers have found a great deal of evidence that parental relations play a very important role in adolescent risk taking behaviour such as sexual promiscuity, drug and alcohol use.

In sum, various researchers have found that the parent-adolescent relationship (and parenting styles) made a significant impact on the behaviour that the teens chose to engage in. There is evidence in the literature cited, that risky adolescent seekers have poor parental relations. Certain preventative variables were mentioned that impacted the decisions adolescents made on risky behaviour. However, it is noteworthy to mention that as Sputa and Paulson (1995) said, "To resist the temptation to hold parents alone responsible for their children's developmental outcomes, it is important to remember that these relationships may not be so direct." (p.50) and that there are other factors involved. It is important at this time to look past the adolescent parent relationship and review some of the literature regarding the consequences of adolescent risky behaviour, specifically, sexual risky behaviour.

Sexual Activity and Risky Behaviour

Adolescents age 15-19 comprised 1.9 million people (6.8%) in Canada in 1991 (Statistics Canada 1991). They are the most susceptible age group for unemployment and crime, and encountered frequent circumstances of suicide and motor vehicle accidents (as leading cause of death) (Youth in Canada, Statistics Canada, 1991). The majority of young Canadians have had sexual intercourse before the age of 20. Sixty percent of males and 56% of females from ages 15-19 reported being sexually active in 1990 Statistics Canada. Now, in changing times,

they are also at an elevated risk for a serious deadly STD. "Sexually active adolescents are at increasingly high risk for exposure to AIDS, which is now the sixth leading cause of death among 15-24 year olds." (Soren, 1995, p. 185). Soren (1995) states that because of the long incubation period of HIV/AIDS, many young adults dying of AIDS may be a result of being infected with HIV as adolescents. "A disturbing trend in adolescent AIDS is the relatively higher proportion of heterosexually acquired AIDS in teenage girls as compared with adult women." (Soren, 1995, p.185). This female trend is similar to the increasing proportion of adolescent females with STDs (Neisseria gonorrhoeae, Chlamydia trachomatis, and NGU/MPC) over adolescent males (Statistical Report in Alberta, 1991). In 1991, female adolescents age 15-19 had a rate of Neisseria gonorrhoeae of 263.27 per 100,000 people in Alberta, whereas male adolescents age 15-19 had a rate of 126.76 per 100,000 people (Statistical Report in Alberta, 1991). In regards to Chlamydia trachomatis, female adolescents age 15-19 had a rate of 2337.85 per 100,000 people, whereas male adolescents age 15-19 had a rate of 332.61 per 100,000 people (Statistical Report in Alberta, 1991). The NGU/MPC (non-gonococcal urethritis/mucopurulent cervicitis) rates were also similar for adolescents age 15-19: females had a rate of 351.41 per 100,000 people and males had a rate of 271.93 per 100,000 people (Statistical Report in Alberta, 1991). Compared to the US, Canada has a significantly lower rate of AIDS cases (397.7 AIDS cases per million residents, compared to the US rate of 1542.3 cases per million, Health Canada, 1996). In 1992, Luster and Small noted that Moore estimated that in the United States every year an approximate 12 million cases of sexually transmitted diseases occur, of these cases, over 25% are accounted for by adolescents. According to the June Quarterly Surveillance Update on AIDS in Canada (1997), the percentage of reported AIDS cases in women has steadily increased. The Surveillance Summary noted that before 1993 the ratio of females to males in regards to reported AIDS cases was 1 to 15, in 1995 it was 1 to 11, in 1996 it was 1 to 8 and in 1997 it was 1 to 7 (Quarterly Surveillance Update, 1997, p.3). The Alberta AIDS Surveillance Summary

(1996) notes that AIDS is a notifiable condition in Alberta. The Alberta AIDS Surveillance Summary (1996) continues that the age group 25-34 experienced the greatest number of AIDS cases, which predictably, acquired HIV in their adolescence or young adulthood. There is a need for researchers to further examine this trend of adolescent sexual risky behaviour.

Researchers have found that adolescence is a time when sexual behaviour patterns become established, therefore, adolescent sexual behaviour influences sexual risk-taking (in regards to disease and unplanned pregnancy) through out the life time (Leigh, Morrison, Trocki & Temple, 1994). Hayes (1987) noted that in the United States, by 20 years of age, over 80% of males and over 70% of females have had intercourse at least once. Studies have found that there are differences between males and females in regards to age at first intercourse and other adolescent behaviours. Sexual activity increases with age; Leigh et al., (1994) found that males tend to begin at age 14, 16 and 17 whereas females usually start at age 15. This is interesting as 15 year old females had a higher reported percentage of sexual intercourse than males, however, as the age of the adolescent increased (by 16 years of age), the percentage of those sexually active became very similar (Leigh et al., 1994). Males are more likely to use and report condom use, however, males high in socio-emotional (defined by Breakwell et al., 1997 as romance, sensitivity and eroticism) emphasis have low levels of sexual intercourse and are less likely to use alcohol or smoke. Females with greater assertiveness have increased sexual activity levels and number of partners, and higher alcohol and tobacco use (Leigh, Morrison, Trocki & Temple, 1994; Choquet & Manfredi, 1992; Breakwell & Millward, 1997). The U.S.A. Centre for Disease Control (CFDC, 1992) found that in 1970, sexual activity in adolescent females was 28.6%, in 1980, it was 41.4%, and in 1988 the number had again risen to 51.5%. Leigh, et al. (1994) noted that, "The trend toward younger age of first intercourse and later age at first marriage translate to a longer period during which adolescents may not be adequately protecting themselves against HIV infection and other STDs." (p.117).

Some researchers have found that risk is subjective to the viewpoint of the adolescent, in other words, researchers assess the adolescent's perception of what risky behaviour entails, therefore the risks identified by the adolescent helps the researcher to predict adolescent risky behaviour (Moore & Gullone, 1996, p.343). These researchers found drinking alcohol, taking drugs, smoking, dangerous driving, criminal behaviour, sexual promiscuity and minor rebellions to be risky behaviours which were related to sexual activity, regardless of the adolescents' awareness of this relationship (Moore & Gullone, 1996; Choquet & Manfredi, 1992; DeWit, Silverman, Goodstadt & Studuto, 1995). Adolescents' reasoning for engaging in these behaviours were based on seeking pleasure and because they simply could get away with it and not get caught (lack of parental monitoring). Therefore, it is important to continue to examine the relationship of involvement in adolescent sexually risky behaviour.

It is evident from the literature reviewed that sexual promiscuity among adolescents is a dangerous, deadly and an interconnecting factor in regards to risky tendencies. With the increase in various STDs including HIV and AIDS and subsequent consequences, the choice to engage in sexual risky behaviour should require more thought and preventative measures. Various risk factors, as discussed above, and an understanding of why adolescents chose to participate in risky behaviour, should continue to be addressed. Hence, sexually risky behaviour among adolescents, and its connection with other risky behaviours, serves as an important behaviour to be monitored, studied and aided by helping and health professionals.

Adolescent Health and Practitioners

"The charge of public health practitioners is to define high-risk behaviour, describe high-risk populations, and design and implement appropriate interventions." (Seidman, Mosher & Aral, 1994, p.130). There has been an increasing interest in various approaches to health behaviour in the recent years, such as health education and programs (Torres, Lecturer,

Fernandez & Fellow, 1995). "Successful efforts to prevent or modify adolescent risky behaviour are likely to reduce health costs for adults as well as adolescents because adults tend to retain the habits set during the teenage years." (Joffe, 1995, p.1203). A great deal of money could be saved in health costs if appropriate targets could be made in prevention or modification of the onset of adolescent risky behaviour. For example, the Canadian AIDS News (November, 1996), cites that each case of HIV that advances to AIDS means approximately $100,000 in direct care and of course an even greater cost is the social cost in which one suffers from the loss of a loved one. Many cases of adult morbidity and mortality, such as adult heart disease, hypertension and lung cancer, could of and can be (in the future) prevented by adopting different lifestyles as adolescents (Joffe, 1995; Soren, 1995; Choquet & Manfredi, 1992). These researchers state that adolescents' risk behaviour can lead to dangerous situations of respiratory disease (smoking), accidents (drinking), dependency and problems with law (drug taking), pregnancy and/or STDs (sexual activity). AIDS is not the only serious risk, "...evidence indicates that girls sexually active at a young age with multiple partners suffer an increase risk of developing cervical cancer later in life..." (Soren, 1995, p.186).

There has been an emphasis on the need to educate medical students to develop skills to attempt to educate patients in order to prevent certain adolescent behaviours. Past efforts to control STDs focused on treatment and the tracing of partners, and hence, further prevention of transmission by curing those infected (Seidman, Mosher & Aral, 1994, p.127). "However, for viral STD, and HIV in particular, effective primary prevention must precede infection. The emphasis of prevention strategies has, thus, shifted to the promotion of behaviour change which reduces risk for infection." (Seidman, Mosher & Aral, 1994, p.127), such as reducing multiple partners (Joffe, 1995; Seidman, Mosher & Aral, 1994). Researchers suggest that agencies and health support services should provide multiple services for adolescents on site, and school based clinics and special adolescent-care facilities are becoming more frequent where adolescents can

seek help confidentially, and avoid expensive health care costs (in the United States) (Joffe, 1995; Soren, 1995). Researchers also note that many parents are misinformed or confused about AIDS, therefore, prevention strategies must include educating the parents with accurate information, and must also look at other risky behaviours such as drug and alcohol use, and must have programs that teach and help parents prevent adolescent use and abuse (Homonoff, Martin, Rimpass & Henderson, 1994; Soren, 1995). These researchers also note that many teens may be aware of the risk of HIV but still place themselves in high-risk situations, therefore, the researchers suggest that testing for HIV is opportune at this age and the medical community must be attentive.

"In 1991, the American Academy of Pediatrics Committee on Practice and Ambulatory Medicine recommended that adolescents be evaluated by a physician at least every 2 years at ages 14, 16, 18 and 20." (Soren, 1995, p.191). However, more recently these guidelines were revised to yearly evaluations of adolescents by physicians with special attention to risk-taking behaviours, such as sexually active girls, who are recommended to have annual pelvic examinations and pap smears (Soren, 1995, p.191). The researcher continues, that screening for these risky, self destructive behaviours should be included in the adolescent's check-up. She also notes that recently, there has been a trend to a new form of medicine-Adolescent Medicine, created as an alternative to pediatricians, family practitioners, internists and so on. This new area of medical research is necessary as adolescents endure serious health ailments and risks different to other ages.

The most common causes of death among US Americans 5-24 years old are: motor vehicle accidents (28%), homicide (21%), suicide (12%) and other accidents (11%) (O'Mara, 1997). In Canada in 1991, the leading cause of death among those 15-19 was motor vehicle accidents, followed by suicide (Statistics Canada, 1991). According to researchers, these high rates of mortality by accidents and suicides can be attributed to various types of risk-taking

behaviour, such as reckless driving, alcohol and drug abuse (Soren, 1995; Choquet & Manfredi, 1992). As mentioned earlier in this section of the literature review, adolescent lifestyles of risky behaviour need direct focus and attention from practitioners and professionals in order to change future health care costs and future deadly consequences. Recent calls for a special focus on adolescent health in the arena of medicine and education is evidence for the need of government support. Adolescence certainly is an area of human development that requires supervision, help and attention.

Summary

"Youth is an age of transition." (Statistics Canada, 1991). In 1991, 90% of adolescents age 15-19 lived with their parents, only 1% lived alone (Statistics Canada). Therefore, familial relations and presence play an important role in the life of the adolescent. Adolescence is an age characterized by high unemployment, violence, high peer influence and subsequent risk for drug and alcohol use, sexual risky behaviour and important decision making opportunities. Adolescents are confronted by many detrimental and damaging encounters such as drugs, alcohol, and sexual intercourse. However, they are also confronted by many rewarding experiences and life time opportunities from which they can learn such as valuable friendships and relationships with peers, parents, siblings and teachers. Adolescence is the age in which important day to day decisions make an impact on life-time events and outcomes. Therefore, enriching adolescents by educating them of the awareness of risk and the opportunity of engaging in safe choices and providing a warm, secure environment, can ease the transition from child to adult. This can begin by looking at the family and the importance of chronological order of birth and subsequent relation that the parents respond to this order with.

The literature reviewed has looked at the origin of birth order studies, to its influence on various variables, including the relationship parents have with their adolescent children. For

example, first born girls have been found to be more confident, assertive and verbally aggressive, however, in general, first born children have been found to be more conservative (even to the point of supporting eugenics) (Cowley, 1996). These traits reflect the parent's childrearing practices and subsequently, the behaviours and choices those children adopt in adolescence. This relationship in turn impacts the decisions adolescents will make in regards to the risky behaviours discussed; sexual intercourse with multiple partners, intercourse without protection, age of first intercourse and drug and alcohol use. The importance of this study lies in the reality of the growing risk of health issues and the need to help adolescents. Sexually transmitted diseases, deadly AIDS, smoking and respiratory/cancer problems, drug and alcohol abuse, overdose, drunk driving and reckless behaviours are only a few of the serious repercussions of adolescent risky behaviour (Joffe, 1995; Soren, 1995; Choquet & Manfredi, 1992). The medical community is beginning to realize the importance of this issue by creating new "disciplines" such as adolescent medicine, and by stressing the importance of adolescent education and awareness in the training of the practitioners themselves. Although birth order has a history of fluxes of interest between the decades, it has continued to be an important indicator of personality differences and behaviours.

Theory Repeal

The present study is an exploratory, inductive study not grounded on theory. Rather, the purpose is to explore the objectives listed prior. There is no relevant theory that pertains to all of the variables included in the present study. Many theories were considered such as family developmental theory, Toman's family constellation theory, Adlerian theory, social learning theory and social exchange theory.

Attempts were made to use assumptions from family developmental theory such as major life transitions cause conditions of risk and time as a central element. However, family

developmental theory did not account for birth order, rather it focused on adolescence as a stage. This theory may of been more applicable to the current study if the study would of been based on developmental stages. The study was based on age similarities and dissimilarities, however, the assumptions of time and conditions of risk, from the family developmental theory, do not account for differences in birth order or gender.

Toman's family constellation theory was also considered. Toman's family constellation theory focuses on sibling relationships and subsequent future marriages. This theory observes age rank and sex of sibling combinations and examines the role a person has had in early interfamilial relationships as carrying over into adult relationships (marriages based on relations had at home in childhood). This theory is relevant to both the current study's birth order and gender variables, however, this theory does not account for the sexually risky behaviour variable that certain adolescents choose to engage in, nor does it account for the parent-adolescent relationship. Rather, Toman's family constellation theory focuses on the sibling relationships one encounters growing up.

Adlerian theory was also taken into consideration. Adlerian theory focuses on birth order as the governing agent in determining personality. However, Adlerian theory neglects to contemplate other important variables that are involved in studying birth order, such as; family size, age spacing, and/or gender. Although Adlerian theory could hypothesize and theorize which adolescent (according to his/her birth order) may engage in the most risky behaviours, Adlerian theory neglects to examine other social reasons why, rather it looks exclusively at birth order as being the causal agent. Adlerian theory also attributes personality traits such as neurotism to be the result of birth order. It is difficult in the present study to directly and causally associate personality traits such as neurotism with sexually risky behaviour. It is also difficult to assume that parenting style is the direct result of one's birth order.

Social learning theory was also considered. Social learning theory has a specific interest in child and adolescent development. It considers the relationship between parent and child/adolescent and focuses on imitation and modeling of behaviour. In particular, the present researcher considered two assumptions of social developmental (learning) theory; using behavior (and development) as a function of interactions between people (in specific, the mother-child relationship), therefore considered the impact of child rearing and importance of communication. Behavior is the cause and effect of later behavior and therefore, the effect that parental behavior has on the child's behavior. This theory offered great insight into the parent-adolescent relationship and engagement in adolescent sexually risky behaviour. However, the theory did not account for birth order and had a dated (Sears, 1957), biased view of interactions, specifically mother-child interactions, rather than father and/or mother-child interactions.

Social exchange theory was examined as the cost/benefit ratio of choosing to engage (or not engage) in behaviour. Social exchange theory allows examination of variables based on the pros and cons on choosing certain behaviours and/or actions. This theory was relevant to the variable which examined adolescent decision to engage (or not engage) in sexually risky behaviour. Social exchange theory can also be relevant to the parent-adolescent relationship because there can be both costs and benefits to certain parenting styles and subsequent adolescent behaviours (or vice versa). However, the theory can not apply a cost/benefit ratio for birth order.

Consequently, no theory encompassed all the relevant variables, therefore, the present study is not deduced from a theory. Rather, the study will generate findings that may be explained by a compilation of possible reasons from various theories. Thus, the purpose of this study is to determine if birth order, and relations with parents, is related to adolescent decision making regarding sexually risky behaviour.

III. Method

Study Design

The present study uses secondary data from the Adolescent Health Survey compiled by Munro and Doherty-Poirier and members of the David Thompson Health Authority (1996).

Description of the Original Study

The original study, the Adolescent Health Survey, was done in 1996. The method chosen was the survey method. The researchers chose to use the survey method as it permitted them access to the whole school, rather than sample only a small subset of those adolescents within each school. The survey was efficient and a large number of respondents were sampled in a short time frame, (therefore, making the method less time consuming). The survey consisted of closed versus open ended responses which made the data easy to analyze. The distribution of the survey method in class was better than distributing the surveys by mail, because the unit of analysis (the adolescents) could all be surveyed at the same time under the same conditions without worry of mail back response rate.

The research design was a cross sectional design. The purpose of the design was to split junior and senior high schools into subgroups which would allow examination of sexually risky behaviour. A cross-sectional design was used to compare six different grade levels; grade 7, 8, 9, 10, 11, 12. These subgroups were analyzed in order to generalize the sample results to the target population. The David Thompson Region in Red Deer provided the funding for the Adolescent Health Survey and distributed the questionnaires in order to determine areas needing education intervention in terms of health risks. A convenience sample was used. The theoretical framework for the original study was based on Prochaska and DiClemente (1982).

Participants

Four junior and two senior high schools were conveniently selected to complete the Adolescent Health Survey. The target population was Central Alberta adolescents, with the accessible population being those adolescents in Alberta junior and senior high schools. The unit of analysis were the individual adolescents in the convenient sample. The survey was administered to 1,911 regularly attending students in Central Alberta in 1996. There were 1,200 students participating from rural communities and 711 students participating from the urban centers. The students were between the ages of 13 and 17 (grades 7-12). The response rate was 100%. There were 908 (51.5%) male students, 854 (48.5%) female students (gender was not specified for 149 respondents) which yielded a total of 1,911 participants. The sample consisted of 25.6% grade 7 students, 22.3% grade 8 students, 23.6% grade 9 students, 12.0% grade 10 students, 9.9% grade 11 and 6.6% grade 12 students. In regards to birth order, 38.2% of the respondents were the oldest born, 5.4% were the only child, 25.0% were the middle born and 31.5% were the youngest born.

Procedures

The original study, the Adolescent Health Survey, was administered during class time. Consent to participate in the Adolescent Health Survey was obtained from the Board of Directors, PTA (Parent Teacher Association), the School-board, Principles, and Teachers. A letter was sent to all parents informing them of the survey and to give them the opportunity to opt their children out of participating in the survey. No parents opted their children out. Students completed the survey during class time for grades 7, 8, 9, 10, 11 and 12. The teachers and members of the David Thompson Health Authority administered the survey and explained the option for students to withdraw from the survey at any time. The students were told they

could withdraw at any point. The instructions were read individually by each student taking the survey. The questionnaire took thirty minutes to complete and each student was given an identical questionnaire. Confidentiality and anonymity were maintained by permitting the survey to be filled out anonymously; no names of participants were marked on any sheet and the survey was handed into the members of the David Thompson Health Authority so that teachers did not have access to student information.

Instrumentation

Scales within the Adolescent Health Survey were tested for validity and reliability. The survey allowed examination of a variety of variables. A pilot study was conducted among 50 junior high school students in Leduc from grades 7, 8 and 9 to ensure the appropriate length and questions asked. These 50 students were conveniently selected because the researcher had access to the school. Many of the students did not finish the pilot survey because it was too long. The pilot study contained 240 questions. Subsequently, the Adolescent Health Survey was shortened to 120 questions.

Scale Construction for the Parent-Adolescent Relationship

In the present study, a parent-adolescent relation scale was developed to compare the level of sexually risky behaviour of each of the birth order groups. The scale was constructed using various tests of validity and reliability. Factor analysis was used to find construct validity. Items that were included in the factor analysis asked about parental strictness, parental expectations, parental criticism, parental-adolescent communication, parental concern and trust (see appendix 2). Factor analysis was necessary in order to build a scale that contained questions sharing the same basic construct. In order for an item to be retained it must have had a factor

loading of at least 0.5. Second Pearson correlation was then run to determine the internal consistency of the scale. The steps used to create the scale using factor analysis were as follows:

1. Based on a definition of parenting, questions were developed.
2. Next, questions were circulated to experts in the parent child area to determine the appropriateness of the questions. In this way, the face validity of the questions was tested.
3. These items were then factor analyzed in order to determine the construct validity of the scale. That is, they were tested in order to determine if the same parenting concepts held together.
4. Internal consistency was assessed through correlation among survey items to ensure internal validity.
5. Cronbach's alpha was used to determine the reliability of the items in the scale.

Definition of Variables

The dependent variable is adolescent sexually risky behaviour, the independent variable is birth order and parent-adolescent relation acts as an intervening variable. The variables that were used in the present study are operationally defined. Adolescents are those students participating who are between the ages of 13 through to 17; or in grades 7 through to 12. Birth order is operationally defined as the ordinal measure, which is the chronological order within the family structure to which one is born (see appendix 1, question # 2). This is different from the theoretical or psychological definition of birth order which is the position entailed by one's style of life and the interpretation that one makes of the situation to which one is born (Billingham, Smith and Keller, 1989, p.111). Sexually risky behaviour is operationally defined in the present study as the number of partners and/or sexual intercourse without protection, such as lack of condom use and/or age of first intercourse. Relations with parents is defined operationally by

creating a scale to determine the parent-adolescent relationship. Gender is male or female. The variables examined were family structure (birth order), relations with parents, gender and sexually risky behaviour. Birth order and gender were measured nominally, sexually risky behaviour was measured as a category and relations with parents were measured ordinally. A Likert scale was used to record the parenting variables. Reliability and external validity were ensured by using a large sample. Reliability was also obtained by providing future researchers with explicit instructions on how to replicate and conduct the study. Construct and content validity was obtained by ensuring that the response options available and the actual responses obtained were appropriate to the measure purported to being measured. The birth order question on the survey adequately measured the ordinal position of one within the family structure (oldest, only, middle or youngest child), just as sexually risky behaviour (defined as intercourse without protection and/or multiple partners and/or age of first intercourse) actually measured the construct under examination.

Statistical Analysis

The purpose of the present study is to determine if birth order, and adolescent-parent relations, are related to adolescent decision making to engage in sexually risky behaviour. The purpose of the analysis was to determine direct, indirect and interactions on the dependent variable. The goal of the researcher was to examine the significance of group differences. The data was analyzed by means of ANOVA's. If the relationships were not significant, one way analyzes of variances were used. In the first analysis, the dependent variable was parenting and the independent variables were birth order and gender (a control variable). In the second analysis, the dependent variable was sexually risky behaviour and the independent variables were birth order, gender (control variable) and parenting. If the independent variables were not categorical, multiple regression could have been utilized. The main premise is as follows:

Birth Order →

Parenting → Sexually Risky Behaviour (Dependent variable)

Gender →

Subsequently, two factorial ANOVAS were examined:

1.) A 3X2 Factorial Design

Birth Order →

Parenting (Dependent variable)

Gender →

and 2.) A 2X3X3 Factorial Design

Birth Order →

Gender → Sexually Risky Behaviour (Dependent variable)

Parenting →

After these were examined, interaction effects were considered for the following: gender, birth order and parenting style. Descriptive statistics included computing the means (measures of central tendency), ranges and standard deviations (measures of variability) for the variables involved in the study in order to describe the sample. Frequency scores had already been computed to analyze the amount of variance within gender, parenting and birth order. The means of birth order (first, only, middle, last) and gender (male, female) had also already been determined. The F values and probability level, means, ranges and standard deviations between the interacting variables were identified and examined through analysis of variance.

Inferential statistics included computing one way analyzes of variance. One way analyzes of variance were run in two stages in order to test the model. As explained above, the first analysis was a 4X2 design (Birth order X Gender) with the intervening variable being parenting utilized in this first analysis as the dependent variable. The second analysis was a 2X4X2 design (Gender X Birth order X Parenting). At this stage parenting was recoded into two

categories. These categories were restrictive and supportive parenting. Subsequently, main effects and interaction effects were examined.

The relationships in the following objectives were examined:

(1) to determine if birth order was related to adolescent sexually risky behaviour (the outcome) for males and females in grades 7 to 12

(2) to determine if parenting style was related to adolescent sexually risky behaviour for males and females in grades 7 to 12

(3) to determine if birth order was related to parenting style of males and females in grades 7 to 12

(4) to determine if there was any interaction between any of these main effects.

These objectives were examined in the following ways:

Main effects on Sexually Risky Behaviour:

objective #1 - Birth Order

objective #2 - Parenting Style

control variable - Gender

Main effects on Parenting Style:

objective # 3 - Birth Order

control variable - Gender

Interaction effects on Sexually Risky Behaviour:

objective # 4 - Gender X Birth Order

Gender X Parenting Style

Gender X Birth Order X Parenting Style

A one way analysis of variance was used because the researcher was comparing the means of risky behaviour for each of the groups. A one way analysis of variance was used to analyze the between group and within group means. After a one way analysis of variance was completed,

Tukey comparisons were run in order to determine between which variables there were significant differences. Tukey comparisons are post hoc tests that are applied to all comparisons of means after a one way analysis of variance, if the F test is significant. This allowed the researcher to compare means. The alpha level was set at .05. There were no null hypotheses because there were no directional hypotheses.

Reverse Scoring

Many questions/variables from the original survey were recoded to fit into the present study. The item "It seems like my parent(s) are always criticizing me" (question # 19) was reversed scored because it was a negative item. Also, in creating the parenting scale, the Likert scale used in the original study needed to be recoded, therefore, in question # 18, 4 became 1, #23, 3 became 2, #24, 1 became 4, #26, 1 became 4, #27, 2 became 3, #28, 1 became 4, #29, 1 became 4, #30, 1 became 4. The variables condom use, age of first intercourse and number of sexual partners were also recoded when examining the relationship between sexually risky behaviour and parenting style. Condom use was recoded into the following: 1-not sexually active, 2-used a condom, 3-did not use a condom. Age of first intercourse was recoded into: 1-not sexually active (response 1 on original study) , 2-14 years and younger (original response 2,3,4,5) and 3-15 years and older (original response 6,7,8). The variable number of sexual partners was also recoded into: 1-no sexual partners (original response 1), 2-1 or 2 partners (original response 2,3), 3-3 or more partners (original response 4,5,6,7). When examining the relationship between birth order and sexually risky behaviour, the variable age of first intercourse was recoded once again into: 1-11 years or younger (original response 2), 2-12 years old (original response 3), 3-13 years old (original response 4), 4-14 years old (original response 5), 5-15 years old (original response 6), 6-16 years old (original response 7), 7-17 years or older (original response 8), 8-have never had sex (original response 1). The variable condom use was

recoded into 0 (original response 1 and 2 from the recoded "condomuse") which represented non risky behaviour (not sexually active and/or used a condom), whereas 1 was recoded to represent risky behaviour (original response 3 from the recoded variable condomuse; did not use a condom). When examining the relationship between sexually risky behaviour and gender, age of first intercourse was recoded into 2-1, 3-2, 4-3, 5-4, 6-5, 7-6, 8-7, 1-8 (based on the already existing recoded age of first intercourse as discussed above).

Limitations of the Study

As mentioned in the instrumentation section, validity and reliability was ensured for the scales developed. Replication of the study would increase the external validity or the generalizability of the study. This is possible because a copy of the Adolescent Health Survey and the statistical measure used to analyze the results are available. However, the sample may not be as generalizable to the accessible population as a randomly distributed sample would be because students were not randomly selected or randomly assigned to groups. Therefore, this may have affected the internal validity of the survey in which all extraneous variables may of not been controlled. Randomization is important because it allows an equal chance of selection within the population and/or study, therefore, safeguarding against possible bias and effects which may of explained variation in responses.

"All sex surveys, it should be pointed out, have an inherent weakness. They can study only self-reports of sexual activity, which means they must rely on their subjects' honesty and the accuracy of their subjects' memories." (Havemann, & Lehtinen, 1986, p.140). Another limitation is that the researcher was restricted because the researcher chose to use secondary data. The researcher had four main limitations: the questions asked, the objectives, the measurement and the variables/definitions chosen. The researcher was limited to the questions already asked and could not vary or change the wording of the questions. Therefore, different

questions asked and/or in a different format may of arrived at the variable under study more directly. Subsequently, one problem is that the survey does not account for the placement within the family structure, for example, the response options for birth order were: first, only, middle, last born. Therefore, it could be possible that the position within the middle group (such as 2nd out of 5 children or 4th out of 5 children) could of made a difference. Another limitation was that question #87 from the original survey did not offer a response option; used a condom, nor were any other condom related questions asked, therefore, two dichotomies had to be developed. Furthermore, response options given in the closed format may of been better explained with different terms/variables and/or definitions, along with a semi-structured format which would of allowed certain answers to be open vs. all closed ended responses. The closed ended responses may of limited the responses by: not providing an adequate answer, not having a suitable option, the participant may of been unfamiliar or misunderstood the question or design of the question (eg. A Likert scale was used to evaluate certain variables, perhaps a semantic differential scale would of been more appropriate for certain items). Another limitation is that there were more junior high schools in the sample than senior high schools. There were also more rural school students surveyed than urban school students which may reflect a difference in response and behaviour. Perhaps having equal proportions of junior and senior high schools and equal proportions of rural and urban students would yield different results. This limitation partially reflects the above mentioned limitation that because schools or students were not randomly selected (rather, they were conveniently selected) in Alberta, there may be a bias in the sample selected because they have common characteristics or effects that were not controlled for. The literature reviewed also cites that birth order studies should account for and control for family size, age spacing, gender and socioeconomic status. This was not possible however in the present study as secondary data was utilized and the data did not offer this information

IV. Results

A parent-adolescent scale was created in order to examine the relationships between parenting style and sexually risky behaviour and birth order.

Face Validity

The face validity of the scale was assured by means of selecting questions based on expert opinion. Therefore, after asking the experts to identify the components of the Adolescent Health Survey which would be representative of the parent-adolescent relationship, 10 items were selected:

1. My parent(s) expect too much from me
2. It seems like my parent(s) are always criticizing me
3. There are too many rules in our house
4. My parent(s) care about me very much
5. My parent(s) keep track of where I am
6. I enjoy spending time with my family
7. What my family thinks of me is very important
8. My family supports me in the decisions I make
9. I can talk to my mother/father about anything
10. My parent(s) trust me.

Construct Validity

By utilizing a factor analysis to develop the parenting styles, construct validity was assured. Only items with a factor loading of .05 or higher were retained. The results of the factor analysis (see Table 1-appendix 3) indicated that two components represented the 10 items.

These being; restrictive and supportive parenting, respectively. The following are the results of the factor analysis, and subsequently, the two components distinguished that comprised the parent-adolescent relationship: Restrictive Parenting; My parent(s) expect too much from me, There are too many rules in our house. Supportive Parenting; It seems like my parent(s) are always criticizing me, My parent(s) care about me very much, I enjoy spending time with my family, What my family thinks of me is very important, My family supports me in the decisions I make, I can talk to my mother/father about anything, My parent(s) trust me.

Internal Consistency

The internal consistency of the scale was measured by Pearson correlations. All of the relationships of the 9 items were significant at the .01 level of significance. Table 2 (appendix 3) illustrates all of the Pearson correlations for restrictive and supportive parenting and subsequently, the scale constructed.

Reliability

Reliability was assured by using Cronbach's alpha, thus making certain that there were consistency within the scores. The reliability score (alpha) of the seven factors making up the supportive component (It seems like my parent(s) are always criticizing me, My parent(s) care about me very much, I enjoy spending time with my family, What my family thinks of me is very important, My family supports me in the decisions I make, I can talk to my mother/father about anything, My parent(s) trust me) was .85. This indicates that those factors had high internal consistency; in other words, they were highly related to one another. The alpha for the 3 factors comprising the original restrictive component (My parent(s) expect too much from me, There are too many rules in our house, My parent(s) keep track of where I am) was .35. As mentioned earlier, one of the three items loaded brought down the other items within the

restrictive component, therefore, that item (My parent(s) keep track of where I am) was eliminated. In conclusion, the alpha level for restrictive parenting was then brought up to .63 which indicates that the 2 factors loaded highly with each other compared to the 3 original factors included.

Objectives

1.) To determine if birth order is related to adolescent sexually risky behaviour for males and females in grades 7 to 12. Table 3a (below) displays the distribution (frequency and percent) of students according to grade. Table 3b (below) illustrates the distribution (frequency and percent) of students according to birth order.

Table 3a: Frequency and Percent of Students according to Grade

Grade of Student		
Grade	Frequency	Percent
Seven	464	25.6
Eight	403	22.3
Nine	427	23.6
Ten	218	12.0
Eleven	180	9.9
Twelve	119	6.6

Table 3b: Frequency and Percent of Students according to Birth Order

Birth Order of Student		
Birth Order	Frequency	Percent
Oldest	728	38.2
Only	102	5.4
Middle	476	25.0
Youngest	600	31.5

Gender was not significantly related to birth order and parenting, therefore, a one way analysis of variance was performed rather than an ANOVA. Table 4 (see appendix 3) presents the results of the one way analysis of variance which illustrates the relationship between birth order and sexually risky behaviour (age of first intercourse, condom use and number of sexual partners).

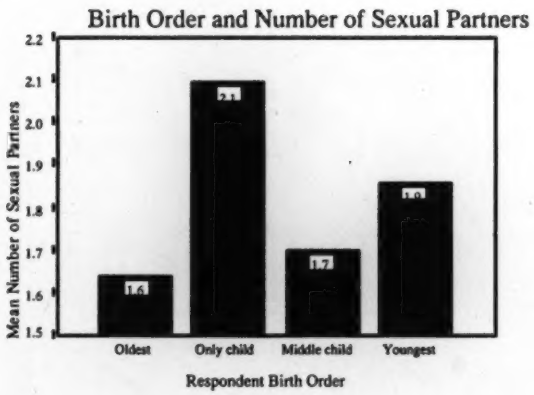
As exhibited in Table 4 (see appendix 3), birth order was significantly related to the age of first intercourse. Table 4 (see appendix 3) illustrates that the middle child is not significantly different from the youngest and/or the oldest child, but is significantly different from the only child. Furthermore, the only child differed from oldest, middle and youngest child in terms of the age of first intercourse. Moreover, the oldest child is significantly different from the youngest but not the middle child. Subsequently, the oldest child had the highest mean of 7.14 which indicates that the oldest child may have been most responsible and therefore, had the oldest age of first intercourse. This differs significantly from the only child which had the lowest mean of 6.17 which argues that the only child had the youngest age of first intercourse. There was an F value of 7.58 for age of first intercourse and birth order which was significant at the .01 level of significance. In terms of condom use, the researcher chose to recode condom use into 2 dichotomies: 0-not risky, and 1-risky. Therefore, the higher the score, the more risky the behaviour in terms of condom use. Table 4 (see appendix 3) exhibits the results found from this relationship. These results indicate that the oldest child was significantly different from the only child and the youngest child. The only child differed significantly from the oldest child with a risky behaviour mean of 30.7% which indicates the only child demonstrated risky behaviour in terms of condom use compared to the oldest child mean of 16.8%. The youngest child had a risky behaviour mean of 22.9% which differed significantly once again, from the oldest child who had the lowest risky behaviour mean of 16.8%. Therefore, the oldest child was least likely to engage in non condom use (and/or was not sexually active) and the only child, followed by the youngest child were most likely to engage in not using a condom or sexually risky behaviour. The F value for condom use and birth order was 4.86 which was significant at the .01 level of significance. Table 4 in the appendices also presents the results of birth order and the number of sexual partners. The only child differed from the oldest child. Furthermore, the oldest child had a mean of 1.64 which indicates the lowest rate of number of sexual partners whereas the only

child, had the greatest mean of 2.09 which implies that they had the greatest number of sexual partners. The F value for number of sexual partners and birth order was 3.57 which is significant at the .01 level of significance. These results illustrate the significant differences that were found in this study. The only child having the highest rate of sexually risky behaviour (age of first intercourse and number of sexual partners combined) and the oldest child being least promiscuous. Figure 1, 2 and 3 below illustrate the relationship between birth order and age of first intercourse and birth order and condom use and birth order and number of sexual partners. It should be noted that in Figure 1, the means 6.0-7.2 do not correspond directly to age, rather they are congruent to the response. Furthermore, 6.0 equates to 16 years of age and 7.0 equates to 17 years of age or older.

Figure 1:

Figure 2:

Figure 3:



The second objective was 2.) to determine if parenting style (restrictive and/or supportive) is related to adolescent sexually risky behaviour for males and females in grades 7 to 12. The findings of the one way analysis of variance suggested that parenting style and gender (as displayed in appendix 3, see Table 5) were not significantly related for either restrictive parenting (F value of .663) or supportive parenting (F value of .338). However, significant relationships were found between parenting style, age of first intercourse, condom use and number of sexual partners.

Table 6 (see appendix 3) indicates the results from the one way analysis of variance. These results affirm that the relationship between age of first intercourse and parenting style (both restrictive and supportive) were significant. The F value for age of first intercourse and restrictive parenting style was 34.91 which is significant at the .01 level of significance. Figure 4 illustrates the relationship. All of the results were significantly different. Those adolescents not sexually active had the least restrictive parents and had a mean of 4.23, whereas, those adolescents who had the most restrictive parents had the youngest age of first intercourse (14 years or younger) with the greatest mean (5.05). Therefore, those adolescents sexually active and those adolescents who had the youngest age of first intercourse had the most restrictive parents compared to those adolescents not sexually active.

Figure 4:

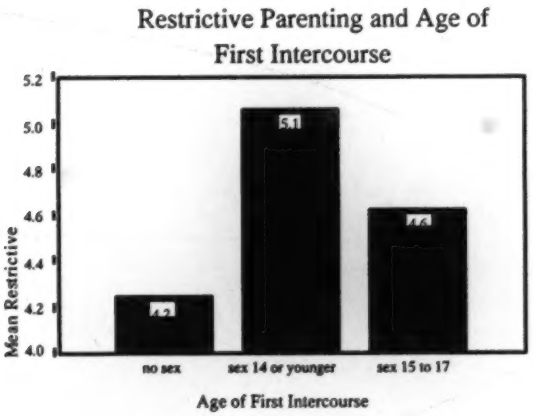


Figure 5 displays the results of supportive parenting and age of first intercourse in which once again, they were all significantly different. Table 6 (see appendix 3) presents the results that those adolescents not sexually active had the most supportive parents, with a mean of 21.66, compared to those adolescents who had the youngest age of first intercourse (14 years and younger) whom had the least supportive parents, with a mean of 18.94. The F value for age of first intercourse and supportive parenting was 52.29 which is significant at the .01 level of

significance. Therefore, those adolescents sexually active and those with the youngest age of first intercourse had the least supportive parents whereas, those adolescents not sexually active had the most supportive parents.

Figure 5:

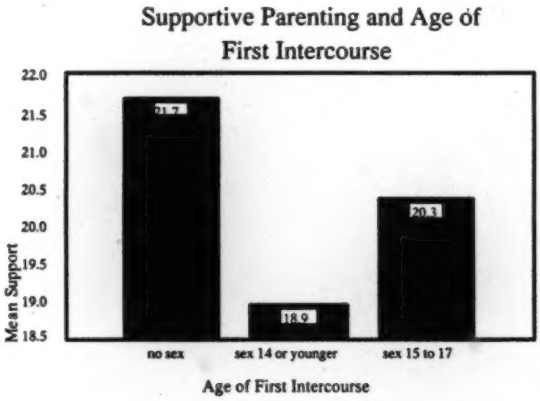
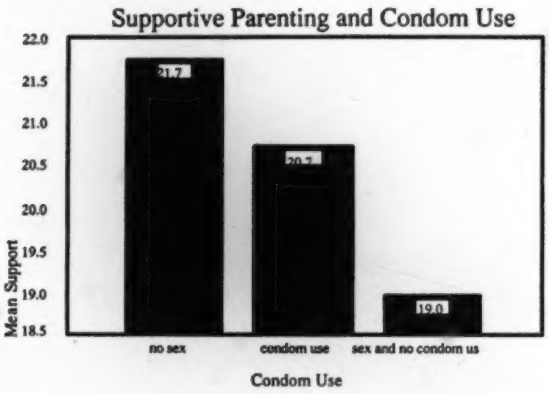


Table 7 (see appendix 3) illustrates the results found from condom use and parenting style which were significant. The F value for condom use and restrictive parenting was 37.23 which was significant at the .01 level of significance. Those adolescents not sexually active had the least restrictive parents compared to those who used a condom and those who did not use a condom. Furthermore, those adolescents who did not use a condom had the most restrictive parents, with a mean of 5.0 (compared to the mean of 4.22 for those adolescents not sexually active). Figure 6 portrays the relationship between condom use and restrictive parenting style. Therefore, those adolescents sexually active had the most restrictive parents compared to those not sexually active.

Figure 6:

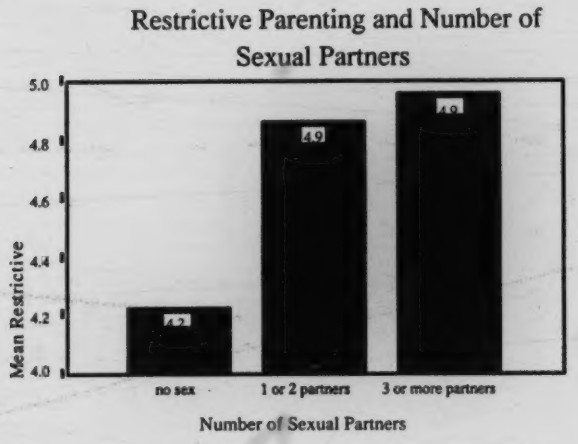
Continued on Table 7 (see appendix 3) in regards to supportive parenting style, there was a significant difference found between those adolescents who were not sexually active (had the most supportive parents) compared to those who did not use a condom (had the least supportive parents). However, there was no significant difference found with those adolescents who used a condom and who did not use a condom or who were not sexually active. There was however, a trend towards significance with those adolescents who did not use a condom and those who used a condom, but because the researcher chose to round up, the significance was not great enough to be recognized at the .05 level of significance. The F value for condom use and supportive parenting style was 61.54 which was significant at the .01 level of significance. Figure 7 displays the results of these relationships. Therefore, the end result was that those adolescents not sexually active had the most supportive parents whereas, those adolescents who were sexually active and did not use a condom had the least supportive parents.

Figure 7:



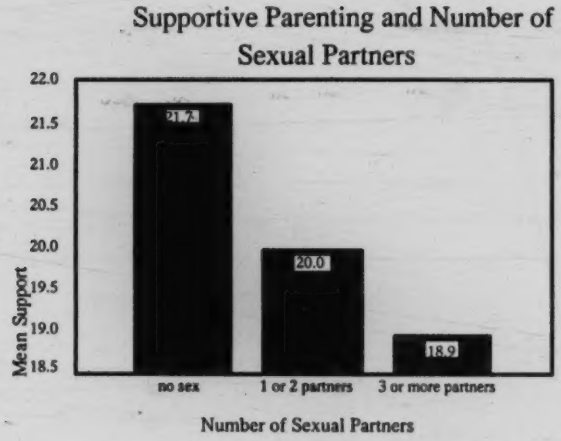
It was found (Table 8, see appendix 3) that those adolescents not sexually active had the least restrictive parents compared to those who had one or two partners and/or three or more partners. The F value for number of sexual partners and restrictive parenting style was 30.64 which was significant at the .01 level of significance. Figure 8 distinguishes these relationships found. Therefore, those adolescents with very restrictive parents had the greatest number of sexual partners (three or more) with a mean of 4.95 compared to those adolescents who had less restrictive parents (mean of 4.86) and the least restrictive parents in which the mean was 4.23 had less sexual partners.

Figure 8:



As exhibited in Table 8 (see appendix 3) it was found that all relationships were significantly different in regards to supportive parenting and number of sexual partners. The F value for number of sexual partners and supportive parenting was 48.29 which was significant at the .01 level of significance. Those adolescents with no sexual partners (not sexually active) were significantly different from those adolescents with one or two partners and three or more sexual partners. Those adolescents with one or two partners (mean of 19.96) were significantly different than those not sexually active (mean of 21.69) or three or more partners (mean of 18.93) and those with three or more partners were significantly different than those with one or two partners or not sexually active. Therefore, those adolescents not sexually active had the most supportive parents, followed by those adolescents with one or two partners who had less supportive parents and those adolescents with three or more sexual partners had the least supportive parents. Figure 9 illustrates these relationships.

Figure 9:



In conclusion, parenting style and sexually risky behaviour (age at first intercourse, condom use and number of partners) were significantly related. Those adolescents with restrictive parents had the greatest rate of sexually risky behaviour and promiscuity, whereas those adolescents with supportive parents had the lowest rate of sexually risky behaviour (which includes the highest rate of not sexually active) and promiscuity.

The third objective was 3.) to determine if birth order is related to parenting style of males and females in grades 7 to 12. As the results from the one way analysis of variance in Table 9 (see appendix 3) illustrate, the relationship between parenting style and birth order was not significant (F value of .976 for restrictive parenting and .548 for supportive parenting). Also, the relationship between parenting style, gender and birth order (also, the fourth objective: 4.) to determine if there is any interaction between any of these main effects) as illustrated in Table 10 (see appendix 3) did not have any significance with restrictive parenting (F value of .554). Stated more clearly, gender and birth order were not related to parenting style. However, a 2-way interaction effect was found with supportive parenting, gender and birth order. Nevertheless, after running Tukey to identify where the difference existed in the means, the

difference found was not large enough to be significant, so was not used as a significant relationship (F value of 2.89-initially significant at the .05 level of significance).

The fourth objective was also examined by means of examining the relationship between birth order, gender and sexually risky behaviour. After running one way analysis of variances on these three variables, it appeared as though there was significance, however, after running Tukey (post hoc comparison), no significant relationships were found. Stated more clearly, the F values were low on the one way analysis of variances initially run, and when the Tukey was ran, the values were completely wiped out. Therefore, there was no interaction effect between birth order, gender and sexually risky behaviour, rather, two direct effects were found: birth order and sexually risky behaviour, and finally, gender and sexually risky behaviour. There were no interactions found between these two direct effects, they were significant separately, although, not in combination.

Table 11 (see appendix 3) displays the results found in regards to the direct effect between gender and sexually risky behaviour. The relationship between gender and age of first intercourse was significant. The F value of gender and age of first intercourse was 18.49 which was significant at the .01 level of significance. Males appeared to have an earlier age of first intercourse (approximately 16 years old) compared to females (approximately 17 years old or older). In regards to condom use and gender, males had a higher rate of risky behaviour. The F value for gender and condom use was 11.20 which was significant at the .01 level of significance. The relationship was significant as males had a risky behaviour mean percentage of 24%, whereas females had a mean percentage of 17.5%. This indicates that males were more likely to be related to sexually risky behaviour (did not use a condom) then did females who had a higher rate of either not being sexually active and/or using a condom (therefore, not risky behaviour). Furthermore, males had a greater number of sexual partners then did females, and once again, this is significant. The F value for gender and number of sexual partners was 30.50

which was significant at the .01 level of significance. Figures 10, 11 and 12 below display the results from Table 11 for gender and age of first intercourse, condom use and number of sexual partners.

Figure 10:

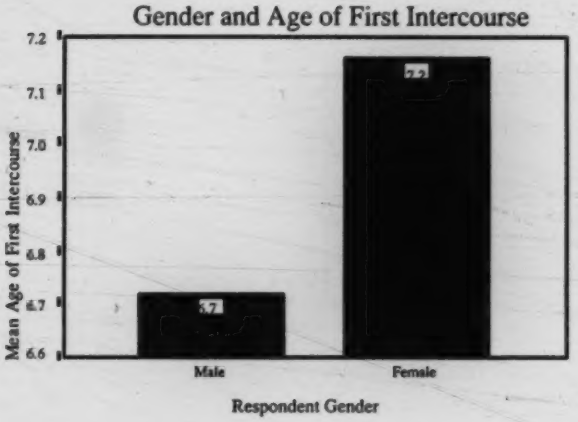


Figure 11:

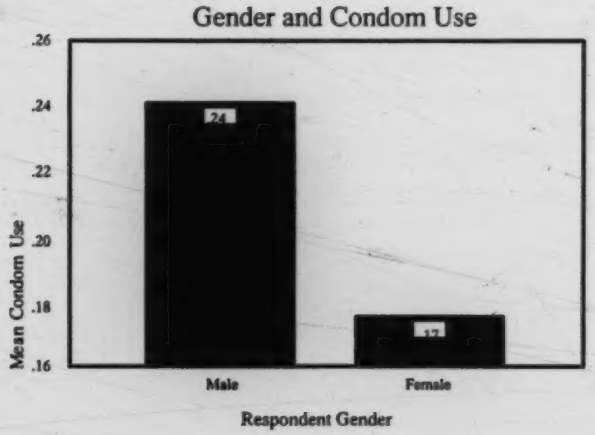
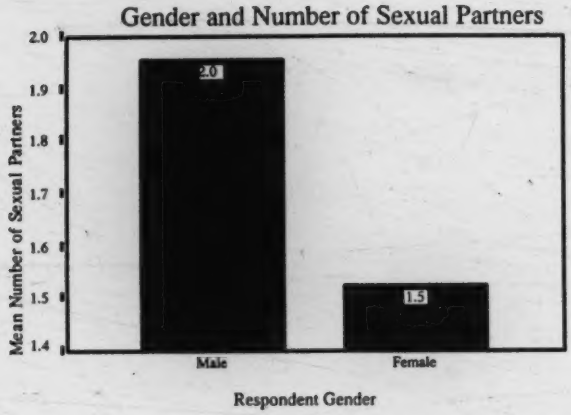


Figure 12:


Gender and Number of Sexual Partners
Mean Number of Sexual Partners
2.0
1.9
1.8
1.7
1.6
1.5
1.4
2.0
1.5
Male
Female
Respondent Gender

V. Summary and Discussion

Relationships are amongst the most complex aspects of life. Relationships during adolescence include stresses related to peers and parents. As Strom et al. (1995) state, "Many adolescents face their greatest adversity in the arena which one might think would be their greatest source of support: the home." (p. 348). Therefore, when examining adolescent risky behaviour, in particular, sexually risky behaviour, it is important to consider the relationship between the adolescent and the parent.

This study was an exploratory, inductive examination of birth order, parenting and adolescent sexually risky behaviour. Several theories were considered, however, none accounted adequately for all the variables under examination. The results of the study can be summarized briefly into three main sections; birth order, parenting and adolescent sexually risky behaviour. Concisely, birth order was related to adolescent sexually risky behaviour (age of first intercourse, number of sexual partners and condom use). More specifically, a relationship was found between the only child and more promiscuous adolescent risky behaviour. In brief, parenting was also related to adolescent sexually risky behaviour, in particular, supportive parenting was related to less adolescent precocious sexual behaviour, and restrictive parenting was related to more precocious and adolescent sexually risky behaviour. Finally, gender was examined, however, it was not the focus of the study, rather it was an important variable to control and consider specifically in relation to birth order. As mentioned earlier, studies that examine birth order should account for gender and it is suggested that they try to account for family size, sibling spacing and socioeconomic status (Cowley, 1997; Rule, 1991; Calhoun, Connley & Bolton, 1984; Fallon & Bowles, 1996; Sputa & Paulson, 1995; Rule, 1991; Billingham, Smith & Keller, 1989; Nystul, 1995). However, by utilizing secondary data, the researcher was unable to control for all of the above extraneous variables. Gender was found to be related to adolescent

sexually risky behaviour, in general, there was a relationship between males participating in more sexually risky behaviours then females. However, the relationship between gender and birth order was not significant.

The literature reviewed cited several different possible reasons for engaging in adolescent sexually risky behaviour (Newcomer & Udry, 1984; Seidman, Mosher, Sevgi & Aral, 1994; Luster & Small, 1994; Odgers, Houghton & Douglas, 1996; Braverman & Strasburger, 1993; Weiss & Schwarz, 1996, - Baumrind, 1968, 1971, 1989, 1991; Hyphantis, Koutras, Liakos & Marselos, 1991; DeWit, Silberman, Goodstadt & Stoduto, 1995; Jenkins, 1996). However, it is important to note that it is very difficult to know and to determine a causal effect without controlling for all possible extraneous variables. For example, when considering the results found for parenting and adolescent sexually risky behaviour, it is important to consider that causality can be directional. More clearly, supportive or restrictive parenting may have caused the sexually risky behaviour or perhaps the sexually risky behaviour caused the supportive or restrictive parenting. Therefore, in this study, only the relationships between birth order, parenting and adolescent sexually risky behaviour were assessed.

When reviewing the literature on birth order, inconsistencies existed in identifying which birth order comprised the most sexually precocious behaviour (Ansbacher, 1977; Calhoun, Connley & Bolton, 1984; East & Felice, 1992; Brook, Whiteman, Brook & Gordon, 1991; Schacter, 1959; Dovan & Adelson, 1966; Touhey, 1971). However, despite what researchers and theorists felt were the most precocious children/adolescents/adults, the category labeled as "only children" was rarely discussed in the literature, and infrequently distinguished. Furthermore, when discussed, only children were associated with first born children or were labeled as "least predicted" (Sulloway, 1997). Only children were also referred to as "singletons" or as "controlled experiments" because they grew up naïve of birth order (Sulloway, 1997, p. 22, 23). This is interesting to note as being an only child was related to adolescent sexually risky

behaviour in the present study. Furthermore, being an only child was associated with an earlier age of first intercourse, greater number of sexual partners and less likely to use a condom. The present study also found that the first born and middle born were least likely to engage in sexually risky behaviour.

It is peculiar that the only child did not have significant relationships with risky behaviours in any of the prior studies examined, nor did the only child attract special attention in any birth order theories. For example, Toman's family constellation theory focuses on the ranking of one's birth order and subsequently the future marital relations one will encounter based on prior early interfamilial sibling relationships (Toman, 1969). Obviously, this does not leave room for only children, as they do not grow up with siblings. Only children in the present study may have stood out for several possible reasons. The literature leads us to believe that only and first born children are similar, therefore, perhaps the only child has similar traits of the first born child, in that they are strongly influenced and surrounded by adults. Thus, they become more mature at a young age and feel the need to prematurely fill adult roles by engaging in "adult" behaviour (sexual intercourse).

The present researcher also found that in terms of an order of engaging in sexually risky behaviour, the only child was the most likely to engage in this behaviour, followed by the last born child, and then finally the middle and first born. Therefore, perhaps the reason the last born children were closely related to only children in terms of their scores on the sexually risky variables, is because only children and last born children have similar traits. Perhaps, only children are very interested in their peers and are very socially active (like the last born child), therefore, they spend more time with their peers and engage in behaviour that is acceptable and common among their age group. Perhaps the only child does not receive enough attention from one's parents and therefore, feels the need to engage in behaviour that will find them attention (albeit it may be negative or positive). Or perhaps the only child receives too much attention

from the parent(s) because there are no siblings, therefore, feels the need to rebel or "break loose" from his/her parents and wishes to engage in more peer relations. In any case, it is essential that future birth order research explore more extensively only children and their behaviours. As for first born children being the least sexually active and promiscuous, this is consistent with past literature where it has been found that first born children are less socially active because they acquire less social skills and are more conservative and cautious and less adventurous (Fakouri & Hafner, 1984; Nesbitt, 1968; Dovan & Adelson, 1966; Kilpatrick & Cauthen, 1969; Ickes & Turner, 1983; Calhoun, Connley & Bolton, 1984).

In regards to birth order and parenting, prior research has found that different parenting styles are related to birth order (Claxton, McIntyre & Wheatley, 1995; Rule, 1991; Schaller, 1978; Ernst & Angst, 1983; Majorbanks, 1995; Sputa & Paulson, 1995). However, in the present study, birth order was not found to be related to parenting. Nevertheless, parenting played a very important role in relation to sexually risky behaviour. Several different parenting styles were cited in the literature such as authoritative, authoritarian and non directive. Two parenting styles were distinguished in the present study: restrictive and supportive. Restrictive parenting was related to adolescent sexually behaviour (age of first intercourse, number of sexual partners and condom use) as was supportive parenting. In this study, adolescents with restrictive parents had a younger age of first intercourse, had higher rates of not using a condom and had the greatest number of sexual partners. Adolescents with supportive parents had an older age of first intercourse, higher rates of using a condom or not being sexually active at all and had the least number of sexual partners. As mentioned earlier, it is difficult to determine the direction of causality, however, both directions will be considered.

As the literature reviewed noted, those adolescents with authoritarian parents had greater negative socialization outcomes and more problems, whereas those adolescents with authoritative parents were well adjusted (Gecas & Seff, 1990; Wess & Schwarz, 1996). It is

important to note that although authoritarian and authoritative can not be equated to restrictive and supportive parenting, the terms share similar connotations which will be explored. One of the connotations of authoritarian parenting is restriction. Restrictive parents, in the present study, may be related to adolescent children rebelling by means of engaging in sexually risky behaviour. Similarly, one of the connotations of authoritative parenting is support. And supportive parents in the present study were related to adolescents not engaging in sexual intercourse or engaging in sexually risky behaviour in a very minute proportion. Therefore, perhaps supportive parenting instigated adolescents to seek parental advice and communication before engaging in sexual activity. However, the opposite may also be true. Perhaps adolescents that engaged in sexually risky behaviour left the parents with no choice but to become more restrictive in order to retain and protect their children from damaging consequences. Or maybe those adolescents who did not engage in sexually risky behaviour were rewarded with warm, open communicative relations with their parents.

Family developmental theory can be considered to help explain these parental and adolescent findings (Boss, Doherty, LaRossa, Schumm, & Steinmetz, 1993). Family developmentalists focus on the sequence of stages. As stated earlier, two assumptions were considered from the family developmental theory; major life transitions cause conditions of risk and time as a central element of the theory. In regards to the latter assumption, perhaps the timing of the "teenage" years of the child within the parents life, initiated aggravation that manifested into over restrictive parents. More clearly, perhaps the years of being an adolescent within the family, was poor timing for the parents and subsequently, the parents became over restrictive with their adolescent children. Furthermore, perhaps the parents were both so busy in their lives with work and other children, that there was not enough time spent with adolescents (supportive communication) or the wrong kind of time (extensive disciplining) was spent. Or perhaps adolescence is viewed by the parents as a major life transition that cause conditions of

risk (Boss, Doherty, LaRossa, Schumm, & Steinmetz, 1993), therefore, the parent(s) feel it is their responsibility to maintain a restrictive environment in order to prevent such conditions of risk (adolescent sexually risky behaviour). Adolescence may be viewed as a major life transition marred with decisions, behaviours and unique situations which lead to conditions of risk if precautions and preventions are not used.

Perhaps social exchange theory would better account for these findings (Boss, Doherty, LaRossa, Schumm, & Steinmetz, 1993). Social exchange theorists examined the cost benefit ratio of choosing to engage or not engage in certain behaviours (Boss, Doherty, LaRossa, Schumm, & Steinmetz, 1993). Perhaps the benefits of an adolescent choosing to engage in sexually risky behaviour out weighed the costs. Furthermore, perhaps being with peers and engaging in a temporarily gratifying experience was better than awaiting parental confrontation and consequences at home. Perhaps engaging in this risky behaviour was one of the few times the adolescent received attention (albeit it may not be the most healthy long term choice). Attention from peers may have been suitable attention to fill in the gap of attention that the adolescent was not receiving at home. Perhaps the parent(s) thought that avoiding communication now (benefit) would deter the adolescent from engaging in sexually risky behaviour (cost). This is congruent with a common myth that researchers found; parents often believe that discussing sex issues with their adolescent places the idea in their head and subsequently, instigates this behaviour. This is false, in fact, communication promotes healthy behaviour and wise choices and often decreased sexual activity results (Alberta Health, 1993).

Another possible theory considered to account for the study's findings is social developmental theory which examines behavior (and development) as a function of interactions between people: (specifically parent; mother and child) (Sears, 1957). Therefore, the impact of child rearing and the importance of communication is identified as a factor in examining adolescent sexually risky behaviour. Poor communication (such as the various types of

parenting styles mentioned earlier), can lead to poor decision making on the part of the adolescent such as the decision to engage in sexually risky behavior. Neglected children, or permissive children may grow to engage in sexual behavior, and may not be able to turn to parents because they are unable to communicate with their parents.

There are many possible explanations for parents to be restrictive or supportive and for adolescents to choose to engage or not engage in sexually risky behaviour. The present researcher found that parenting style was related to engaging in adolescent sexually risky behaviour, or it may be stated that the researcher found that engaging in adolescent sexually risky behaviour was related to parenting style. In either case, it is important and vital to continue to examine and study parent-adolescent relations and adolescent sexually risky behaviour. Future research should examine both directions of causality and should control for extraneous variables such as socioeconomic status, relations between parent(s), family size and age of siblings. Also, it is important that practitioners acknowledge this important information and provide appropriate help to adolescents and parents based on it. This includes helping the adolescent and parent to find accurate information, counseling and support.

Researchers found that females tend to have an earlier age of first intercourse (slight difference) and that males tended to report using a condom more than females (Leigh, Morrison, Trocki & Temple, 1994; Choquet & Manfredi, 1992; Breakwell & Millward, 1997). These findings are inconsistent with those in the present study as males tended to have an earlier age of first intercourse and males had a higher rate of not using a condom. A relationship was found between males and number of sexual partners. Males had a higher rate of sexually risky behaviour; they engaged more frequently in unprotected sexual intercourse and had a greater number of sexual partners and an earlier age of first intercourse. Females had significantly lower rates in all three categories of sexually risky behaviour than males. These findings are partially supported by the literature.

It is true that one sexually risky behaviour may be associated with the other, for example, an earlier age of first intercourse may be related to a greater number of sexual partners. However, past researchers found different gender findings. Researchers found that adolescent females have higher rates of sexually transmitted diseases (Alberta Statistical Report, 1991; Soren, 1995). According to Soren (1995, p. 185), AIDS is now the sixth leading cause of death among 15 through to 24 year olds and there is an increasing rate of cases of heterosexually acquired AIDS in teenage girls. The present researcher did not examine sexually transmitted disease statistics nor rates, however, males were found to be involved in more sexually risky behaviour than females, therefore, assuming that males would have a higher risk of sexually transmitted diseases. This is a very important issue to address because part of the researcher's initial purpose of the study was to examine the growing HIV/AIDS cases in young adults that is associated with adolescent sexually risky behaviour. This requires further research in order for practitioners, educators and parents to become more aware of the increasing risk of this deadly consequence of adolescent risky behaviour in order to prevent this epidemic by educating adolescents. Perhaps, the male participants in the present study began intercourse at an earlier age and initially did not use a condom, therefore, as the adolescent progressed in age, his pattern of behaviour continued. This would account for why males had a higher rate in all three adolescent sexually risky behaviour variables. Perhaps the females discussed sex with their parent(s), teachers, siblings, doctors and so on, more frequently and had more communication with others and therefore, acquired safe sex behaviour. Perhaps because the majority of participants were in grade 7, many of the females had not yet engaged in sexual intercourse, therefore, the males, who had an earlier age of first intercourse, were over represented in the sexual activity questions. Or perhaps, as in any sex survey, there is the risk that participants are not honest or accurate, or sway their self-reported response (Havemann, & Lehtinen, 1986).

The present researcher identified several important relationships found between adolescents, parents, birth order and adolescent sexually risky behaviour. Adolescence truly is a progressive stage in human life that requires open communication, support, guidance and respect. Decisions to engage in adolescent sexually risky behaviour, especially when the odds may appear to be against adolescents (studies find that the majority of adolescents are sexually active, and there are high pregnancy rates, STD rates and an increasingly higher rate of HIV/AIDS in young adults and adolescents) (Statistics Canada, 1990; Soren, 1995; Alberta AIDS Surveillance Summary, 1996; Leigh, Morrison, Trocki & Temple, 1994; Hayes, 1987) are never easy. That is why continuing research on adolescent sexually risky behaviour and an exploration of possible reasons for engaging in adolescent unsafe sex is critical. Birth order, albeit its interesting findings in relation to adolescent sexually risky behaviour, must be recognized as a valuable and helpful tool in combination with other factors. Birth order does not stand alone, there are other extraneous variables that add to the person that one becomes. Therefore, acknowledging birth order is important, however, acknowledging the atmosphere that the person grew up in (perhaps often associated with one's birth order) is also important. Future research in the area of birth order and adolescent sexually risky behaviour and parenting style should examine and/or account for family size, age spacing, socioeconomic status and gender. Parents have an obligation to their adolescent children to provide a healthy atmosphere that fosters growth through communication and acceptance of change and trials and errors of human life. Lived experiences are valuable learning tools, however, it is essential to educate adolescents that there are other ways to learn than the hard way, therefore, prevention of HIV/AIDS can be accomplished through safe sex education and open communication.

Results of this study also call for further research in the area of adolescent sexually risky behaviour and parent-adolescent relationships. "In all studies of contraceptive use at initiation of sex, between one third and two thirds of adolescents report using no contraception..." (Moore &

Rosenthal, 1993, p.16). There are many educational programs for adolescents, however, are they getting the message about unsafe sex and the important value of protecting themselves? Alberta Education has implemented sexuality instruction for all Alberta schools. Beginning in September of 1989, all school boards across Alberta were required to make sexuality education compulsory for grades 2 through to grade 12, with emphasis in grades 7, 8, 9 and Career and Life Management in High School. Parents of minors or students over 18 years of age, have the option of withdrawing from the sexuality education classes. There are many sources that provide free information for both parents and adolescents regarding sexually safe behaviours, in order to avoid risks. There are both social and financial costs to engaging in unhealthy and risky behaviour. Adolescence can become a time when sexual behaviour patterns become established, consequently, adolescent sexual behaviour influences sexual risk-taking through out the life time. Therefore, many future AIDS cases can be avoided by adopting different lifestyles as adolescents. In conclusion, as researchers from the Canada youth and AIDS study (King, Beazley, Warren, Hankins, Robertson & Radford, 1989) and as Munro & Doherty-Poirier (1991) found: adolescents report going to the medical community and schools for information about STDs and AIDS, and report going to the family for information about sexuality and birth control, therefore, it is of great importance to foster communication through a sexually healthy family that encourages an aware, educative environment.

VI. References

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Appendices

Appendix 1

Question #2: What position are you within your family?

a. first born/oldest

b. only child

c. middle child

d. last born or baby of the family

Answer A,B,C or D for each question on this page.....

A - Strongly Agree

B - Agree

C - Disagree

D - Strongly Disagree

Question # 18: My parent(s) expect too much from me

19: It seems like my parent(s) are always criticizing me

23: There are too many rules in our house

24: My parent(s) care about me very much

25: My parent(s) keep track of where I am

26: I enjoy spending time with my family

27: What my family thinks of me is very important

28: My family supports me in the decisions I make

29: I can talk to my mother/father about anything

30: My parent(s) trust me

Question # 86: If you have had sexual intercourse, at what age did you experience your first sexual intercourse?

a. I have never had sexual intercourse
b. 11 years old or younger
c. 12 years old
d. 13 years old
e. 14 years old
f. 15 years old
g. 16 years old
h. 17 years old or older

Question # 87: If you did not use a condom the last time that you had sexual intercourse what was the reason?

a. I have not had sexual intercourse
b. we did not have a condom
c. I did not think that it is important to use a condom
d. I/my partner is using another form of birth control
e. we just got carried away

Question # 90: How many sexual partners have you had in your lifetime?

a. 0, I have not had any sexual partners
b. 1
c. 2
d. 3

e. 4

f. 5

g. 6 or more partners

Appendix 2

Parent-Adolescent Relationship Scale

Factor Analysis:

Questions:

1. My parent(s) expect too much from me
2. It seems like my parent(s) are always criticizing me
3. There are too many rules in our house
4. My parent(s) care about me very much
5. My parent(s) keep track of where I am
6. I enjoy spending time with my family
7. What my family thinks of me is very important
8. My family supports me in the decisions I make
9. I can talk to my mother/father about anything
10. My parent(s) trust me

Appendix 3

Table 1: Component Matrix for the Scale Construction of Parent-Adolescent Relations

Item	Component	
	1	2
My parent(s) expect too much from me	-.636	.492
It seems like my parent(s) are always criticizing me	-.692	.333
There are too many rules in our house	-.564	.518
My parent(s) care about me very much	.714	.217
My parent(s) keep track of where I am	.397	.667
I enjoy spending time with my family	.763	.223
What my family thinks of me is very important	.669	.305
My family supports me in the decisions I make	.763	.138
I can talk to my mother/father about anything	.705	6.276E-03
My parent(s) trust me	.728	-9.44E-02

Table 2: Item Scale Correlations for the Parent-Adolescent Relations Scale Supportive Parenting

	Family Criticizing	My parent(s) care about me very much	I enjoy spending time with my family	What my family thinks is very important	My family supports me in the decisions I make	I can talk to my mother, father about anything
Pearson Correlation						
Family Criticizing	1.000	.412**	.405**	.336**	.424**	.414**
My parent(s) care about me very much	.412**	1.000	.503**	.428**	.489**	.394**
I enjoy spending time with my family	.405**	.503**	1.000	.565**	.548**	.500**
What my family thinks is very important	.336**	.428**	.565**	1.000	.489**	.418**
My family supports me in the decisions I make	.424**	.489**	.548**	.489**	1.000	.512**
I can talk to my mother, father about anything	.414**	.394**	.500**	.418**	.512**	1.000
My parent(s) trust me	.448**	.481**	.460**	.379**	.516**	.473**
My parent(s) keep track of where I am	.160**	.377**	.329**	.305**	.308**	.214**
Sig. (2-tailed)						
Family Criticizing	.	.000	.000	.000	.000	.000
My parent(s)	.000	.	.000	.000	.000	.000

care about me very much						
I enjoy spending time with my family	.000	.000	.	.000	.000	.000
What my family thinks is very important	.000	.000	.000	.	.000	.000
My family supports me in the decisions I make	.000	.000	.000	.000	.	.000
I can talk to my mother, father about anything	.000	.000	.000	.000	.000	.
My parent(s) trust me	.000	.000	.000	.000	.000	.000
My parent(s) keep track of where I am	.000	.000	.000	.000	.000	.000

** Correlation is significant at the .01 level (2-tailed)

Table 2 continued: **Restrictive Parenting**

	My parent(s) expect too much from me	There are too many rules in our house	My parent(s) keep track of where I am
Pearson Correlation			
My parent(s) expect too much from me	1.000	.470**	-.082**
There are too many rules in our house	.470**	1.000	.006
My parent(s) keep track of where I am	-.082**	.006	1.000
Sig. (2-tailed)			
My parent(s) expect too much from me	.	.000	.000
There are too many rules in our house	.000	.	.783
My parent(s) keep track of where I am	.000	.783	.
N			
My parent(s) expect too much from me	1902	1899	1896
There are too many rules in our house	1899	1905	1899
My parent(s) keep track of where I am	1896	1899	1902

** Correlation is significant at the .01 level (2-tailed)

Table 4: One Way Analysis of Variance of Birth Order, Condom Use, Number of Sexual Partners and Age of First Intercourse

Age of First Intercourse and Birth Order				
N	1864			
	Oldest	Only	Middle	Youngest
Mean	7.14[12]	6.17[134]	6.99[3]	6.78[24]
SD	1.93	2.72	2.10	2.26
F	7.58**			
Condom Use and Birth Order				
N	1843			
	Oldest	Only	Middle	Youngest
Mean	.168[12]	.307[1]	.212	.229[2]
SD	.374	.464	.409	.421
F	4.86**			
Number of Sexual Partners and Birth Order				
N	1858			
	Oldest	Only	Middle	Youngest
Mean	1.64[1]	2.09[1]	1.70	1.86
SD	1.52	1.92	1.59	1.74
F	3.57**			

** significant at .01 level of significance
1 significant difference at .05 level of significance using Tukey
2 significant difference at .05 level of significance using Tukey
3 significant difference at .05 level of significance using Tukey
4 significant difference at .05 level of significance using Tukey

Table 5: One Way Analysis of Variance of Restrictive and Supportive Parenting Style and Gender

Restrictive	Parenting Style and Gender	
N	1751	
	Male	Female
Mean	4.42	4.35
SD	1.66	1.58
F	.663	
Supportive	**Parenting Style and Gender**	
N	1700	
	Male	Female
Mean	21.10	21.21
SD	4.38	4.45
F	.338	

Table 6: One Way Analysis of Variance of Age of First Intercourse and Restrictive and Supportive Parenting Style

Restrictive	Age of First Intercourse and Parenting Style		
N	1859		
	Not Sexually Active	14 years and Younger	15 years and Older
Mean	4.23[12]	5.05[13]	4.62[23]
SD	1.56	1.80	1.62
F	34.91**		

Supportive	Age of First Intercourse and Parenting Style		
N	1810		
	Not Sexually Active	14 years and Younger	15 years and Older
Mean	21.66[12]	18.94[13]	20.33[23]
SD	4.08	5.11	4.45
F	52.29**		

** significant at .01 level of significance
1 significant difference at .05 level of significance using Tukey
2 significant difference at .05 level of significance using Tukey
3 significant difference at .05 level of significance using Tukey

Table 7: One Way Analysis of Variance of Condom Use and Restrictive and Supportive Parenting Style

Restrictive	Condom Use and Parenting Style		
N	1838		
	Not Sexually Active	Used a Condom	Did not use a Condom
Mean	4.22[12]	4.89[1]	5.0[2]
SD	1.55	1.88	1.77
F	37.23**		
Supportive	**Condom Use and Parenting Style**		
N	1791		
	Not Sexually Active	Used a Condom	Did not use a Condom
Mean	21.72[1]	20.69	18.95[1]
SD	4.05	4.65	4.96
F	61.54**		

** significant at .01 level of significance
1 significant difference at .05 level of significance using Tukey
2 significant difference at .05 level of significance using Tukey

Table 8: One Way Analysis of Variance of Number of Sexual Partners and Restrictive and Supportive Parenting Style

Restrictive	**Number of Sexual Partners and Parenting Style**		
N	1852		
	No Sexual Partners	1 or 2 Partners	3 or more Partners
Mean	4.23[12]	4.86[1]	4.95[2]
SD	1.56	1.71	1.82
F	30.64**		
Supportive	**Number of Sexual Partners and Parenting Style**		
N	1806		
	No Sexual Partners	1 or 2 Partners	3 or more Partners
Mean	21.69[12]	19.96[13]	18.93[23]
SD	4.08	4.57	5.25
F	48.29**		

** significant at .01 level of significance
1 significant difference at .05 level of significance using Tukey
2 significant difference at .05 level of significance using Tukey
3 significant difference at .05 level of significance using Tukey

Table 9: One Way Analysis of Restrictive and Supportive Parenting Style and Birth Order

Restrictive	**Parenting Style and Birth Order**			
N	1894			
	Oldest	Only	Middle	Youngest
Mean	4.46	4.48	4.36	4.31
SD	1.63	1.78	1.68	1.57
F	.976			
Supportive	**Parenting Style and Birth Order**			
N	1838			
	Oldest	Only	Middle	Youngest
Mean	21.20	20.59	21.14	21.11
SD	4.32	5.53	4.33	4.35
F	.548			

Table 10: One Way Analysis of Restrictive and Supportive Parenting Style, Gender and Birth Order

Restrictive	**Parenting Style, Gender and Birth Order**	
Main Effects	Gender	Birth Order
	3.52	1.82
F	1.33	.688
2-Way Interactions	1.46	
F	.554	
Supportive	**Parenting Style, Gender and Birth Order**	
Main Effects	Gender	Birth Order
	95.23	6.68
F	4.91*	.344
2-Way Interactions	56.10	
F	2.89*	

* significant at .05 level of significance

Table 11: One Way Analysis of Variance of Gender and Sexually Risky Behaviour: Age of First Intercourse, Condom Use and Number of Sexual Partners

Gender and Age of First Intercourse			
	Male	Female	
N	887	841	
Mean	6.72	7.16	
SD	2.37	1.84	
F	18.49**		
Gender and Condom Use			
	Male	Female	
N	878	830	
Mean	.240	.175	
SD	.428	.38	
F	11.20**		
Gender and Number of Sexual Partners			
	Male	Female	
N	884	838	
Mean	1.95	1.52	
SD	1.86	1.32	
F	30.50**		

** significant at .01 level of significance